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ABSTRACT

This paper provides the material for an interview/discussion of the teacher as researcher involved in a self-study of his own teaching activity. Opening sections describe the original self-study conducted by a teacher over the course of the 1993 school year while teaching secondary school math and science in Australia. These sections also briefly describe self-study as a means to professional change and improvement among teachers. The data collection consisted of a daily journal maintained by the teacher and read and commented on by colleagues and used finally as a source for developing 24 theme statements on teaching and learning. Two other data sources were the work of a research assistant who spent 12 days visiting classes and interviewing 22 students to gather their perspectives and student writing from throughout the year. The remaining sections describe the format and goal of the proposed discussion and contain three extracts from the journal. The presentation/interview is intended to use the data and the presence of the self-study participant to explore the possibilities associated with the introduction of data for analysis through public discussion. The attenders at the presentation were expected to become actively involved in discussion and study of the data, possibly creating new forms of knowledge in the process. Table 1 lists the 24 theme statements. Contains eight references. (JB)

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Researcher as Teacher: Practical Inquiry and Formal Research

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Researcher as Teacher: Practical Inquiry and Formal Research

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Overview

In 1993, the second author completed a self study of his teaching experience in a secondary school. Such self study is gaining wide acceptance as a powerful source of new knowledge as well as being seen as an important prerequisite for personal improvement of teaching. How does one make the findings of self study more widely accessible? We would argue that findings have to be presented in a way that connects with the experience of the audience and promotes their involvement and learning. This session will take the form of an interview as a way of informing and involving participants in the exploration of the data gathered form the teaching learning experiences during 1993. A major focus of this session concerns understanding the implications and outcomes of self study in an attempt to determine whether the insights of practical inquiry can lead to more formal research knowledge.

Introduction

An increasing interest in self study of practice appears to be related to several factors. In some cases it appears to be a development of Schön's (1983, 1987) ideas about reflection on practice. Munby and Russell (1993) have developed these ideas to highlight the "authority of experience" as a key to knowledge and understanding of teaching and learning derived from the self-study of Russell's experiences when he returned to teaching High School Physics. There is also a realisation that there is no educational change without people change and there has been too much emphasis on mandated change and curriculum materials driven attempts at reform. By focussing on personal practice and experience teachers may undertake genuine enquiry that leads to improvement. Whitehead (1993) refers to teachers as "living contradictions", behaving as teachers in ways that are at odds with their beliefs, values and desired ways of acting. Examining these contradictions can be a stimulus for personal improvement.

Self study aspires to provide a stimulus for others to better interpret their own experiences, so extending the personal benefits of self study to new knowledge for others. Is it possible to make the results of self study more widely available in ways that allow new meanings to be established by others? Does self study allow for new forms of knowledge to be developed? The presentation associated with this paper will explore our approach to the possibility of generating new forms of knowledge from self study.

Studying the classroom experience

In 1993, the second author completed a teaching allotment in a secondary school. This activity had several purposes but the major one, for this paper, was to study teaching and learning as a participant in the process. The significant understanding achieved by teachers prepared to undertake serious self study of their classrooms (Baird and Mitchell, 1986; Baird and Northfield, 1992) served as a guide to further possibilities.

Data was gathered from three main sources. A daily journal was maintained and this journal was read by interested teachers in the school and provided a stimulus for extended discussion about students and teaching and learning. The author did not review the journal until the end of the year and at this time developed 24 theme statements (see Table 1) grouped under five headings: 1) Nature of learning; 2) Creating conditions for learning; 3) Student perspectives on learning; 4) Process of teaching and learning; and 5) Overall reactions to the experience. Each statement summarised significant experiences and suggested possible interpretations of unresolved questions and issues related to teaching and learning. This journal analysis offers one way in which the results of the self study may be documented and presented for wider consideration.

A second source of data was prepared by a research assistant who spent 12 days attending classes and interviewing 22 of the students to gather their perspectives on the classroom experiences and schooling in general.

The third main source of data was gained from student writing both from regular classroom tasks and specific responses to classroom experiences. This data source provided intriguing material for considering teaching and learning.

For this paper and the associated presentation the journal (using descriptions of some of the episodes contained within) will be the main data source.

Learning from self-study

Richardson (1994) distinguishes between two forms of research on practice: formal research and practical inquiry. She argues that "Both forms...may be conducted by the practitioner, and at times, practical inquiry may be turned into formal research...one could suggest then, that practical inquiry may be foundational to formal research that will be truly useful in improving practice." (pp. 7 & 8).

In this case the researcher became the practitioner and has worked from a self-study/practical research perspective through to more formal, more widely available and accessible research knowledge (for example; Table 1). One way of accessing the practical research perspective is to explore the thinking associated with the 'raw' data from the journal. We therefore intend to explore the data that led to the more formal research perspective of the assertions (from Table 1) through a public analysis of the data from the first author's teaching experiences in 1993.

One of the salient features of the interview will be to pursue the development of formal research knowledge through a public form to better understand the foundations of the knowledge able to be created and communicated through self study.

Attempting to use self-study data in this way is important if self study is to provide opportunities for new forms of knowledge (Whitehead, 1993). We need to create new ways of presenting the data which allows interested participants to link self study experiences with their own experiences. In this way a range of responses and interpretations may lead to the "new forms of knowledge" which are the aspirations for many involved in self study.

The presentation associated with this paper is designed to explore the possibilities associated with the introduction of data for analysis through public discussion. The first author has selected extracts and the second author (the self study participant) will provide the context to initiate the wider discussion. The interview of the second author about the teaching, thinking and learning associated with the extracts is designed to explore how focussing on one's personal practice publicly might lead to new forms of knowledge. Therefore, the aim of this form of presentation is to enhance the joint learning experience associated with the interaction from this presentation and the authors' reflections on the experience. By publicly accessing his reflection on practice (Schön, 1983, 1987) it is anticipated that participants' reflection on practice will also be enhanced as they attempt to link their thoughts, experiences and learning episodes with those being discussed in this session. Hence, reconsidering existing knowledge in new and different ways may be a catalyst for developing new ways of understanding one's own practice.

For the extensive third extract, examples of questions that might guide the following public discussion are included but are obviously only a starting point. The first two extracts are brief enough to be read during the session and appropriate questions formed by the participants in response to their views of the extracts and of the questions posed by the first author. Obviously then, it is anticipated that as the audience become more involved in the discussion that instances in the extracts that they identify with will be pursued.

The extracts retain the bulk of their original content in order to place the writing in context, the sections which are highlighted will be used to initiate the discussion.

Table 1: Learning from a teaching experience (Northfield, 1994)

Nature of Learning

1. Quality learning requires learner consent.
2. Learning is done by rather than to students.
3. Student prior experiences are crucial and often do not fit the learning demands expected.
4. Effort and risk taking are critical for learning.
5. Understanding is rarely experienced and not expected for many students.

Creating Conditions for Learning

6. Teacher change precedes student change.
7. Changes in assessment (beliefs and practice) are essential. Students must see ideas and activities which improve learning being valued.
8. Self-confidence and trust are critical attributes for students.
9. Need to have a balance between management demands and maintaining learning opportunities in the classroom.
10. Students can have a significant impact on classroom climate. Few students can make a big difference.
11. There is a limit to the thinking and learning demands that can be placed on students.
12. Need for teachers to respond to contextual factors and make intuitive decisions rather than always following the plan.

Student Perspectives on Learning

13. Success gained by "right answers" to defined tasks.
14. Enjoyment regarded with suspicion in terms of learning.
15. Lessons with different teachers allow "fresh starts" and defined tasks.
16. Student faith in texts: associated with routine tasks and dependable knowledge.
17. Students wish to be successful but to be seen as "mediocre" by their peers.

Process of Teaching and Learning

18. Effective interventions increase the spread of students.
19. Frequent use of particular teaching strategies leads to passive student responses.
20. Importance of increasing the repertoire of teaching strategies.
21. Finding rare opportunities for active learning in the "dailiness" of schooling.

Overall Reactions

22. Time and careful review are essential for professional development.
23. Importance of a model and language of learning so that students and teachers can discuss teaching and learning issues.
24. Understanding student responses requires details of student and class context (social structures, expectations of other teachers, etc.).

Extract 1:

July 26

Well I don't think the excitement or sense of achievement is ever going to come. Two activities designed to encourage interest and involvement were "lost" in the continual effort to insist on attention. When given routine tasks they put their heads down and do what is required. **As soon as I introduce something different requiring some thinking and activity I "break set". It may be a mixture of excitement and an opportunity to "show off". Anything different is unsettling and it would be so easy to stay with routine tasks. My admiration for PEEL teachers is immense. How did they do it? Why did they persist? The huge range of possible teaching learning activities "evaporates" in the reality of classrooms. Student expectations and ability to set the context are extremely powerful.** The importance of encouragement and support is obvious and perhaps the effort to do it alone is too much. I wonder why I continue to search for new ideas when I am disappointed with the way they turn out. Today it was the RIME activity on fractions and the problem of working out the height of a tree. **Perhaps I am expecting too much and not appreciating the impact I am making. I don't believe I am hindering anyone and I hope I am seen to be encouraging. There is a "dailiness" in teaching and I needed to be reminded. It was interesting to hear some sessions at CONASTA and ASERA from the perspective of a teacher as well as researcher. I did get annoyed at some assumptions about teachers and teaching. These people who sit outside (including me) who have a wish to state what is wrong and what should be done. No wonder teachers "turn off" and comment on the irrelevance of much research.** This whole experience has been unsettling and I am not sure what I felt I could achieve. I can manage teaching but I am not sure that I like what I am able to manage. Is it me who cannot "break set"? Oh for a positive encouraging experience!!

Participants: this space is provided for you to construct any questions you may wish to pose or for noting interesting issues/concerns raised through the interview.

Extract 2:

Friday, September 3 (Just to let you know I am still persisting. A recent extract from my journal).

A little aside before today's lessons. I am reading a draft of an interesting PhD thesis by Michael McNamara. It is a study of teacher thinking during a professional development effort. His thesis is that problem areas related to teaching are raised but generally dealt with in unsatisfactory ways. **The "problems" are framed in a variety of ways with the leader framing the problems in theoretical ways. One common response is to engage in "politeness" mechanisms to support teachers and encourage their continuing participation but avoid dealing with particular issues.**

It was interesting to see an increase in pedagogical issues in semester 2 and a decrease in student problems. Over time the probems were seen to have solutions. My specific interests were the teacher frames which tended to establish insoluble problems and at times show little educational conviction for many of the activities they carry out. **Teacher frames are certainly not theoretical and activities are defended on grounds of welfare, management, parent expectations, "coping til Friday" etc.**

How do I frame my problems? Well my theories are not important frames for many of my activities. My intuitive responses are based on my assessment of context. Perhaps there are two layers of frames. My overall rationale for teaching Maths and Science or anything. The classroom decisions I make are rarely "framed" by these broader more theoretical frames. You do what you do because you are responding to context, student moods and expectations and student "frames". School is a place where you complete your tasks - serve your time. They know I am trying to make them think but where is the value in that when peer pressures, parental expectations, past experiences do not fit this picture. Teachers have to act in a world of differing frames. **Theories and professional development situations provide views of the world which are often incompatible with the community and classroom world in which they have to act. My program in teaching does not stand up to close scrutiny among my peers nor against my own beliefs and aspirations. How do I judge my efforts? How do others (eg. the kids) judge my efforts.** A second year might have lead to the Semester 2 responses Michael found in his study. A better attempt at bringing the two worlds together. Experience leading to new levels of understanding (more appropriate pedagogical knowledge).

The two lessons - (1) I gave them a simple electric circuit to set up and I was annoyed to find a number of students give up and refused to persist and work out the instructions from the diagram. My expression of disappointment must have had an impact on Kim and Allysa who were very keen to show me their work in the next lesson. **Another example of something beyond a mechanical task and some students reluctant to undertake some basic thinking - happy to simply say "I can't work it out". My frame and hopes are out of tune with what they expect to do in schools. What are the benefits of thinking? Many will regard my demands as strange and unreasonable.** Doubt that I am making much progress with some and those that are making progress are the more successful anyway.

Participants: this space is provided for you to construct any questions you may wish to pose or for noting interesting issues/concerns raised through the interview.

Extract 3:

April 29

The whole experience is marked by extreme highs and lows. Perhaps teaching is like this...The long effort to communicate and establish the rationale for our preservice approach is clearly having no impact in sectors of the Faculty. At least some, not involved, remain critics. It seems possible to convince the world but not those in the School. So a difficult job becomes a waste of time. The teaching experience must always be affected by this other role when the researcher becomes teacher...The science lesson had taken a lot of thought and I chose to do the "Lost at Sea" activity to encourage some group discussion and writing. A little disappointed with how it went yet all agreed that it was interesting and a good variation. **I do feel constrained by the content of Science and the gap between what I am doing and where I would like to be appears huge. I can't go on this way. Tomorrow we will try a POE as we search for a "breakthrough"**...Our ideas about teaching and learning don't always appear to be very relevant. It is certainly an experience of the teaching role - learning is in there somewhere. Robbie is back but not doing anything.

April 30

The science class POEs went very well because I spent more time giving some introductory notes and setting the two problems. The discussion was good and the observation for the full and empty coffee jars was clear cut. The dropping of the 2 jars from the tower was less clear cut. The observation that people were "seeing what they believed" was interesting. Unfortunately the period was cut short because of staff meeting so we could not resolve the situation...Must think about providing some opportunities for some students to get some extra Maths attention. The same students take up time in class and it is clear that some like Rebecca, Lyndal, Nicholas are less likely to seek help. More time - there is no doubt teaching can eat up time as you try to do the right thing by all students.

May 6

The science class followed as we continued with the full and empty coffee jars rolling and dropped from a height. We checked our observation of the dropping jars and then discussed our explanations of our observations. Students then wrote their own responses. When I asked how many students now felt they wanted "answers" from them I was pleased to hear the students did not feel this was appropriate. When I asked why they readily responded that, "We have to understand." "It would not matter what you said, it is what we think that matters." This wide rejection of the "right answer" being provided was encouraging. They certainly saw a mismatch between the POE approach and giving a right answer. Another time when I wished I had taped the episode or there had been an outsider to discuss the student response. Within the daily routine things are happening - I wouldn't have believed it if I had not heard it.

May 7

The science lesson concluded the discussion of the coffee jars in what appeared to be a satisfactory way. The students wrote their explanations. **The wet weather caused me to change plans and attempt another POE - heating a flask expanding the air and then creating a siphon when the flask cools. Very few predictions and perhaps this was one POE too many in such a short time.** Less sustained interest although the task was completed and they happily wrote their explanations...the high points are infrequent and do not guarantee that teaching and learning will move to a new level.

May 26

...**I am getting the feeling that they are understanding and appreciating the reasons for some of the activities.** I am interested in the way many students respond to a problem solving task. When the solution is not obvious they quickly assume the inevitable failure and feel they cannot do it. Some panic and give up. **The fact that thinking takes time is difficult for students to grasp. Success is equated with a rapid response yielding one answer - anything else is not easy to cope with. On the other**

hand the "pay-off" is great when students achieve "the impossible" as Greg did today. Yes - a good day.

1) What do you mean by "constrained by the content of science?"

2) Explain the purpose of a POE and what *you* see as its value as a teaching/learning tool.

3) What prompted the use of a POE and why did you do "one too many?"

4) Explain the thinking associated with the extract (May 6) about understanding and that of the one right answer (May 26).

5) How has this experience of teaching a Year 7 class influenced your teaching at University?

6) How has teaching Year 7 influenced your views about learning?

7) Why is it that you feel the personal learning through this experience has little influence on the thinking of some of your colleagues in the Faculty (Extract: April, 29)? How could you use it to be a positive influence in the Faculty?

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